

Amendments to Specification

Please amend the paragraph beginning on page 1, line 11, with the following new paragraph:

Recently, it is demanded to make an optical disc storage with medium high density. Therefore, in optical disc apparatuses, research and development have been underway for shortening the wavelength of a light source and for enlarging the numerical aperture (NA) of a reproduction optical disc system. Further, it is desired to increase the transfer rate of data in such the reproduction optical disc systems.

Please amend the paragraph beginning on page 2, line 12, with the following new paragraph:

This optical element 10 has a substrate 14A formed by an optical material and having a thickness t_1 . The substrate 14A has a convex part 11 configuring a convex lens and a flat part 12 positioned around the convex part 11.

Please amend the paragraph beginning on page 2, line 16, with the following new paragraph

The optical element 10 can be formed by heat treating a circular mask layer with a Radius R formed on the front surface of a planar optical material to form it into a lens shape by surface tension, then etching the planar optical material so that the lens shape is transferred to the optical material.

Please amend the paragraph beginning on page 9, line 3, with the following new paragraph:

Preferably, in the step of forming the first and second mask layers, the second mask layer having an opening part is formed, then the first mask layer is formed at the opening part. In this case, the second mask layer is formed by an etching-resistant material.

Please amend the paragraph beginning on page 17, line 21, with the following new paragraph:

By the heat treatment, the shapes of the mask layers 26 and 27 in FIG. 4B become the shapes of the mask layers 26A and 27A in FIG. 4C. The mask layer 26A has a circular convex shape (a convex lens shape).

Please amend the paragraph beginning on page 23, line 14, with the following new paragraph:

Due to the heat treatment, the mask layer 36 of FIG. 5C becomes the shape of a mask layer 36A of FIG. 5D. The mask layer 36A has a circular convex shape (i.e., a convex lens shape).